

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 252011-2200									
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed name _____	Application Number 10/820,410		Filed April 8, 2004								
	First Named Inventor Yi-Cheng Liu										
	Art Unit 2169	Examiner Spieler, William									
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <table style="width: 100%; border: none;"><tr><td style="width: 50%; vertical-align: top; padding-bottom: 10px;"><input type="checkbox"/> applicant/inventor.</td><td style="width: 50%; vertical-align: top; padding-bottom: 10px;">/Daniel R. McClure/ _____ Signature</td></tr><tr><td style="vertical-align: top; padding-bottom: 10px;"><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</td><td style="vertical-align: top; padding-bottom: 10px;">Daniel R. McClure _____ Typed or printed name</td></tr><tr><td style="vertical-align: top; padding-bottom: 10px;"><input checked="" type="checkbox"/> attorney or agent of record. Registration number 38,962</td><td style="vertical-align: top; padding-bottom: 10px;">770-933-9500 _____ Telephone number</td></tr><tr><td style="vertical-align: top;"><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____</td><td style="vertical-align: top;">January 26, 2009 _____ Date</td></tr></table> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p>				<input type="checkbox"/> applicant/inventor.	/Daniel R. McClure/ _____ Signature	<input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)	Daniel R. McClure _____ Typed or printed name	<input checked="" type="checkbox"/> attorney or agent of record. Registration number 38,962	770-933-9500 _____ Telephone number	<input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____	January 26, 2009 _____ Date
<input type="checkbox"/> applicant/inventor.	/Daniel R. McClure/ _____ Signature										
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<input checked="" type="checkbox"/> *Total of <u>1</u> forms are submitted.											

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Yi-Cheng Liu

Serial No.: 10/820,410

Filed: April 8, 2004

Confirmation No. 7813

Group Art Unit: 4141

Examiner: Spieler, William

TKHR Ref. 252011-2200

Top-Team Ref. 0503-A30243US

For: **Process Scheduling System and Method**

REMARKS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop – Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

The following remarks are provided in support of the accompanying pre-appeal brief request for review.

Rejections under 35 U.S.C 103(a)

Claims 1, 3, 6, 8, 10, 13, 15, 17, and 20 were rejected under 35 U.S.C 103(a) as allegedly being unpatentable over Butt et al. (U.S. Pat. No. 5,889,944) in view of Yamagashi (U.S. Pat. No. 5,870,604), Aref et al. (U.S. Pat. No. 6,023,720), and Bigus (U.S. Pat. No. 5,442,730). Applicant respectfully submits that these rejections are misplaced.

In regard to claims 1, 8 and 15, Butt, Yamagashi, Aref and Bigus collectively do not teach all claimed features. In this regard, Butt, Yamagashi, Aref and Bigus fail to

disclose, suggest, or teach, *inter alia*, the following highlighted features expressly recited by independent claims 1, 8, and 15:

- “fetching resource status data of at least one resource item of the application system, wherein the resource item comprises a central processing unit (CPU) and a disk of the application system, and *the resource status data comprises data for the CPU use rate and **data for the disk use rate***”;
- “determining **an execution time point** for at least one process according to the resource status data using a neural network model, **wherein the CPU use rate, the disk use rate and a peak time interval are adopted as processing elements of the neural network model**, and the resource status data is fed to the neural network model for calculating the execution time point for the process”; and
- “determining whether **the execution time point** for the process is present, and when the execution time point for the process is present, executing the process at the execution time point”.

Simply stated, the Examiner has misapplied the cited art with respect to the above-emphasized features.

First, the Examiner asserted that the claimed feature of determining an execution time point for at least one process according to the resource status data has been disclosed by Butt. Applicant respectfully disagrees. In the claimed embodiments, a time point is calculated (*i.e.*, determined) for the process. Col. 4, lines 44-51 of Butt states: “If the resource is not free, in a step S12, the job is placed on a queue (the holding queue) of jobs which are waiting for a resource to become free. Some jobs are scheduled for execution at a later time. If it is found in step S11 that the resource is free, in a step S13 a check is made to determine if the job is scheduled for execution at a later time”. Significantly, no time point is calculated (*i.e.*, determined) in Butt. The execution of jobs depends on whether the resource is free or not. Thus, nowhere in Butt does it disclose the claimed feature of “determining an execution time point for at least one process”. For at least this reason, the rejections should be overturned.

Additionally, the Examiner asserted that the claimed feature of *determining whether the execution time point for the process is present, and when the execution time*

point for the process is present, executing the process at the execution time point have been disclosed by Butt. Applicant respectfully disagrees. As expressly define in the claims, a time point is calculated for the process. *The trigger module only needs to check timer and determine whether the determined execution time point is present, and trigger the process to be executed when the determined execution time point is present.* Col. 4, lines 21-22 of the Butt reference reads “If a job can be executed immediately, it is passed to the module SMAN which loads it on to a server”. Butt does not teach the claimed feature, but rather only relevantly teaches that when the job can be executed, it can be loaded to the server for execution. It is understood that, in Butt, *the status of the resource must be always monitored to determine whether the resource is free or not.* If the resource is free, the job can be executed. This is different from the claimed embodiments, and nowhere in Butt does it disclose the claimed feature of “*determining whether the execution time point for the process is present, and when the execution time point for the process is present, executing the process at the execution time point*”.

Further still, the Examiner asserted that “It would have been obvious to one ordinary skill in the art at the time the invention was made to combine the teaching of Aref with that of Butt and Yamagashi, as the disk i/o throughput can have a large effect on system performance. Applicant respectfully disagrees. The term “disk use rate” of the claimed embodiment cannot be properly equated to the disk i/o throughput, as asserted by the Examiner. In the claimed embodiments, the resource item comprises a central processing unit and a disk of the application system, and the resource status data comprises data for the CPU use rate and data for the disk use rate. As previously explained, “disk use rate” means the occupation situation of the disc. The occupation situation of the disc may be a ratio relative to the total size of the disc. The disk i/o throughput, however, is the input/output quantity of the disc relative to a time unit, which is patentably different from the claimed invention.

Additionally, col. 5, lines 26-35 of Aref states: "This solution has been found to have several drawbacks. First, batching a large number of writes to increase the disk bandwidth utilization (by reducing seek time) may lead to either an increased likelihood of the system violating the deadline of newly arrived read requests or starvation of the write requests. Also, interrupting the SCAN order of currently existing reads to schedule writes may increase the average seek time and lower disk utilization. This increases the overall delay of read requests at the server, leading to a reduction in QOS, as observed by the application." It is clear that Aref introduces batching a large number of writes will increase the disk bandwidth utilization, and interrupting the SCAN order of currently existing reads to schedule writes may lower disk utilization. Aref only relevantly introduces the basic concept and results on the disk and bandwidth thereof when applying reads/writes to a disc. As previously explained, the objective of Aref is to support simultaneous read and write requests in the presence of real-time requirements and high bandwidth demands. Various embodiments of the invention dynamically calculate an execution time point for a process according to the resource status of the resource item, which is patentably distinguished from Aref. Nowhere does Aref disclose the disk situation (disk use rate) can be used to schedule a process.

Further, the Examiner asserts that Bigus teaches the use of a neural network model for timing which runs outside a peak time interval. The applicant respectfully disagrees. The claimed embodiments recite: "optimize the scheduling of a process on an application system under the general limited factors". In the claimed embodiments, the CPU use rate, the disk use rate and a peak time interval are input (parameters) of the neural network for calculating the execution time point of a process. As explained previously, Bigus discloses a neural network is used for job schedule. No additional details are discussed in Bigus. In Bigus, Figs. 6A and 6B illustrate steps required to construct a delay cost function. Col. 8, lines 45-47 of Bigus states: "Since the training steps of FIGS. 6A and 6B may be performed at any arbitrary time, training may be

deferred to a time when computer system 100 is not busy.” It is clear that Bigus only relevantly teaches the training steps of FIGS. 6A and 6B can be performed when computer system 100 is not busy. The parameter of “when computer system is not busy” or “the time where computer system is not busy” is not used to calculate the scheduling result, such as the execution time point, as claimed. Nowhere does Bigus disclose or teach the resource status data (CPU use rate and the disk use rate) and the peak time interval of the application system can be integrated to the neural network for job scheduling.

Since Butt, Yamagashi, Aref and Bigus fail to teach the above claimed features, independent claims 1, 8, and 15 are patentable over the cited combination. Insofar as all remaining claims depend from claim 1, 8, or 15, all claims patently define over the cited art for the same reasons. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance.

A credit card authorization is provided herewith to cover the fees associated with the accompanying Notice of Appeal. No additional fee is believed to be due in connection with this submission. If, however, any additional fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

/Daniel R. McClure/

By: _____
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